

PATENT

Atty. Dkt. No. WEAT/0555

**REMARKS**

This is intended as a full and complete response to the Office Action dated August 24, 2005, having a shortened statutory period for response set to expire on November 24, 2005. Please reconsider the claims pending in the application for reasons discussed below.

***Claim Objections***

Claim 19 stands objected to because "the layer" lacks antecedent basis. Applicants have changed the dependency of claim 19 to depend from claim 13 where there is antecedent basis for the layer. Accordingly, Applicants respectfully request withdrawal of the rejection and allowance of the claim.

***Claim Rejections Under 35 U.S.C. § 102***

Claims 1-3, 5, 8, 10, 12-14, 16 and 19 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Beasley* (U.S. Patent Number 4,387,954). In response, Applicants respectfully traverse the rejection. Additionally, Applicants have canceled claims 2, 5, 8 and 10 without prejudice.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Further, the elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Claim 1 recites the limitation of "a layer disposed on a flat surface of the D-shaped portion, wherein a refractive index of the layer changes in response to a change in the measurand." The Examiner states that "*Beasley* does not teach that the refractive index of the layer changes in response to a change in the measurand." The Examiner has relied on an obviousness rejection under § 103 based on *Beasley* in view

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of *Bergh* (U.S. Patent Number 4,386,822) with regard to this limitation. Accordingly, Applicants traverse the § 103 rejection below as applied to claim 4.

Claim 8 includes the limitation of a "layer capable of changing thickness in response to the measurand, wherein the measurand includes at least one member of the group consisting of heat, humidity, light, electric field, magnetic field and chemicals." In contrast, a coupler disclosed in *Beasley* has an interleaved film between two fiber optic waveguide cores with elastomeric properties to enable a change in spatial relationship between the two fiber optic cores due to pressure. Thus, the interleaved film disclosed in *Beasley* has a thickness dependent on pressure without any indication that the film responds to the measurands recited in the claim. Contrary to the Examiner's statement that *Beasley* teaches that the measurand includes light, an optical medium taught in *Beasley* for use in controlling the removal of cladding does not change thickness.

Claim 12 recites that "a strain applied to the D-shaped portion provides a change in a polarization of the light transmitted through the optical sensor in response to the parameter." The Examiner states that "*Beasley* does not teach that the strain applied to the sensor changes a polarization of the light." The Examiner has relied on an obviousness rejection under § 103 based on *Beasley* in view of *Bergh* with regard to this limitation. Accordingly, Applicants traverse the § 103 rejection below as applied to claim 18.

Therefore, *Beasley* fails to teach, show or suggest each and every limitation in either of claims 1, 8 or 12. Further, Applicants submit that these claims and all claims dependent thereon are allowable. Accordingly, Applicants respectfully request withdrawal of the rejection and allowance of claims 1, 3, 12-14, 16 and 19.

#### ***Claim Rejections Under 35 U.S.C. § 103***

Claims 4, 7, 9, 15, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Beasley* in view of *Bergh* (U.S. Patent Number 4,386,822). In response, Applicants respectfully traverse the rejection. Additionally, Applicants have canceled claims 4, 7, 15 and 18, without prejudice.

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The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See MPEP § 2142. To establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP § 2143.

Regarding the rejection of claim 4 as it may be applied to amended claim 1, *Beasley* and *Bergh* fail to teach, show or suggest “a layer disposed on a flat surface of the D-shaped portion, wherein a refractive index of the layer changes in response to a change in the measurand.” The Examiner states that “*Beasley* does not teach that the refractive index of the layer changes in response to a change in the measurand.” Further, a polarizer disclosed in *Bergh* utilizes a crystal that is properly selected and oriented such that light of one polarization can be retained within a fiber while light of a second polarization is removed. See, column 2, lines 44-47. Accordingly, the crystal can have multiple refractive indices and be oriented to adjust the lossiness of one polarization without affecting the other. See, column 3, lines 3-13. Based on the foregoing description of the polarizer taught in *Bergh*, the reference is silent with regard to any measurand much less any refractive index changes in response to a change in the measurand. Therefore, *Beasley* in view of *Bergh* fails to teach, show or suggest each and every limitation in claim 1. Applicants submit that claim 1 is not obvious.

Applicants submit that claim 9 is patentable based at least on the traversal presented above regarding claim 8, which claim 9 depends from. Accordingly, Applicants respectfully request withdrawal of the rejection and allowance of this claim.

Regarding the rejection of claim 18 as it may be applied to amended claim 12, *Beasley* and *Bergh* fail to teach, show or suggest “a strain applied to the D-shaped portion provides a change in a polarization of the light transmitted through the optical sensor in response to the parameter.” The Examiner states that “*Beasley* does not teach that the strain applied to the sensor changes a polarization of the light.” Based on the previously described operation of the polarizer taught in *Bergh*, the reference fails to

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mention a strain applied to the polarizer or a change in a polarization of light in response to a parameter. Therefore, *Beasley* in view of *Bergh* fails to teach, show or suggest each and every limitation in claim 12. Applicants submit that claim 12 is not obvious.

Claims 6, 11, 17 and 20 stand rejected under 35 U.S.C. § 103(a) as being obvious over *Beasley* in view of *Bailey, et al.* (U.S. Publication 2002/0197037). In response, Applicants submit that these claims are patentable based at least on the traversal presented above the independent claims from which claims 6, 11, 17 and 20 depend. Accordingly, Applicants respectfully request withdrawal of the rejection and allowance of the claims.

### Conclusion

The references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed. Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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